



**CREDIBLE**  
EU carbon farming



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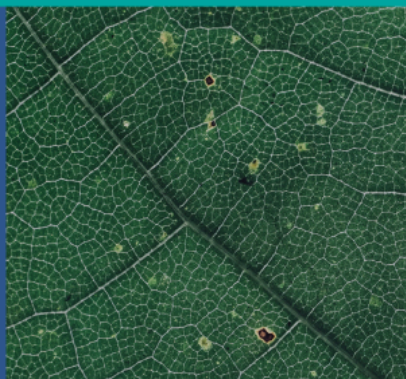
# How to identify and promote best carbon farming practices

**Project CREDIBLE: “Building momentum and trust to achieve credible soil carbon farming in the EU”.**

**Funded by the European Union under the Grant Agreement n° 101112951.**

[www.project-credible.eu](http://www.project-credible.eu)

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## Executive summary

This document is part of the EU-funded project CREDIBLE, Grant Agreement 101112951, and it captures the main outputs of the first round of conversations had within the Focus Group on “Best Management Practices” (FG 1.1).

The main goals of this Focus Group (FG) are i) to consolidate the scientific knowledge on land management activities that can maximise soil carbon removals and emission reduction in agriculture and ii) to identify tools and approaches to support the diffusion of these practices on the ground. To meet these goals, experts (details provided in Tables 1 and 2) were invited to participate in a number of activities (with the main ones listed in Table 3). This document describes this process and highlights the key points that have emerged.

## 1. Focus Group participation and activities

**Table 1** - Partners of CREDIBLE who participated in the Focus Group.

| Name of the expert                    | Affiliation | Role   | Country |
|---------------------------------------|-------------|--------|---------|
| Julio Román-Vázquez                   | ECAF        | Lead   | ES      |
| Miguel Á. Repullo-Ruibérriz de Torres | ECAF        | Lead   | ES      |
| Gerry Lawson                          | EURAF       | Member | ES      |
| Constantin Muraru                     | EURAF       | Member | BE      |
| Iryna Raiskaya                        | UG          | Member | DE      |
| Gerald Jurasinski                     | UG          | Member | DE      |
| Kaj Granholm                          | BSAG        | Member | FI      |
| Pilar Andrés Pastor                   | CREAF       | Member | ES      |
| Aleix Valls                           | CREAF       | Member | ES      |

**Table 2** - Members of the Focus Group external to CREDIBLE.

| Name of the expert | Affiliation           | Role   | Country |
|--------------------|-----------------------|--------|---------|
| John Crawford      | University of Glasgow | Member | UK      |



|                         |   |        |     |
|-------------------------|---|--------|-----|
| Marc Rosiers            | European Landowners Organisation                | Member | BE  |
| Anna de Boeck           | European Landowners Organisation                | Member | BE  |
| Rico Huebner            | DefAF   | Member | DE  |
| Sonja Kay               | Agroscope                                       | Member | CH  |
| Michael den Herder      | European Forest Institute                       | Member | FI  |
| Robert Borek            | Institute of Soil Science and Plant Cultivation | Member | PL  |
| Gerardo Moreno          | Universidad de Extremadura                      | Member | ES  |
| João Palma              | Moinhos de Vento (MVarc)                        | Member | PT  |
| Maurizio Ventura        | Libera Università di Bolzano                    | Member | IT  |
| Pier Mario Chiarabaglio | CREA  | Member | IT  |
| János Rásó              | Hungarian Forest Research Institute (ERTI)      | Member | HU  |
| Jakub Huska             | VUKOZ   | Member | CZ  |
| Laurence Pelletier      | Coop Carbone                                    | Member | CA  |
| Kevin Wolz              | Savanna Institute                               | Member | USA |
| Paul Burgess            | Cranfield University                            | Member | UK  |
| Rene Cardinael          | INRAE   | Member | FR  |

**Table 3** - List of main activities carried out to steer the conversations.

| General description of the activity  | Date of execution |
|--|-------------------|
| Pre Focus Group online meeting (T1.1 partners). Fact sheets  | 18/7/2023         |
| Pre Focus Group online meeting (T1.1 partners). Preliminary Best C farming practices                               | 19/1/2024         |
| Plenary session presentation + panel during the European Carbon Farming Summit                                     | 6/3/2024          |
| Breakout session during the European Carbon Farming Summit   | 6/3/2024          |
| Meetings concerning summary and conclusions coming from the European Carbon Farming Summit with FG representatives | 7/3/2024          |



## 2. Introduction

There are many land uses and regions with different edaphic properties and climatic conditions. Determining the **appropriate practices in each pedoclimatic zone and estimating carbon sequestration potential** is a challenge. The scientific literature for some practices is often sparse, and field-level influences hinder the collection of robust evidence, especially for the estimated carbon sequestration potential, which contribute to exacerbate the debate around the potential impact of carbon farming. To solve the issue, it is therefore key to promote a wide scientific dialogue on the benefits of specific soil management systems. Existing and new data should be collected and compiled in support of these practices, with an eye on how to operationalise the knowledge for a faster practice implementation by land managers.

The objective of this FG is to **consolidate** the knowledge and scientific evidence on the best management practices to capture and store carbon in soils to make the systems more robust and find reliable solutions, aiming at fostering a **scientific agreement** on **which practices** should be prioritised in the EU **according to land use** (cropland, agroforestry, forest, peatlands and grassland). At the same time, it is considered very important to generate a practice description framework that could speak the language of farmers and foresters; a blueprint for practice description enabling land managers to take informed decisions toward sustainable management. The analysis carried out by the focus group should help prioritise practices for each land use trying to regionalise for European pedoclimatic zones. To meet these goals, 26 **experts on different land use** were involved in the FG, and then further supported by the attendants of the 1<sup>st</sup> European Carbon Farming Summit (Valencia 2024).

## 3. Summary of recommendations

About **practices and indicators**:



- It is important to define indicators for considering a practice as part of carbon farming. These indicators must always be measurable, have a demonstrable scientific basis and be quantifiable.
- Carbon farming practices should be easily adaptable to different pedoclimatic regions and should take a holistic view, considering not only the rate of carbon sequestration and emission reduction but also the ecosystem services provided by these practices.
- There is a need to advise farmers and land users to continue applying carbon farming if the results are not desirable.

**Barriers** to adopting the practices:

- Lack of cooperation and knowledge of how to apply the practices on the ground, which is why not only the practices should be promoted, but also ongoing advice.
- Access to technology.
- Economic barriers, low demand for C credits and the cost in transition.

On **how to spread** the integration of carbon farming practices in Europe:

- Transferring knowledge through examples, creating training centres.
- Practices need to be credible and transparent, showing the difficulties of implementing the practices and giving clear advice on what the real carbon sequestration and emission reduction potential is.
- Scalability of practices and development of regional definitions of Carbon Farming Practices.
- Operational and comprehensible certification and smart subsidy programs would encourage farmers to adopt carbon farming practices.

## 4. Key elements from FG conversations

Focus Group 1.1. is being formed as a wide **network** of academics, experts in soil health for each land use, solution developers, farmers and other stakeholders working



together toward precisely reaching consensus on the best carbon farming practises for each land use.

Before the First European Carbon Summit (Valencia, 2024), several issues considered as well as format and content of the **fact sheets for each best carbon farming practice** were discussed in internal meetings of the partners involved in the task 1.1 of Credible, root of FG 1.1.

The creation of a new fact sheet format was considered key to describe carbon farming practices. Specifically, the experts agreed that presenting practical information in a somehow lighter and more graphical way, with a clear display of indicators that land managers can relate to, could be useful in promoting the adoption of more sustainable farming approaches. Some key aspects of the fact sheets, on which the Focus Group is working, are:

- Description of the carbon farming practice
- Suitability for land use and types of soil
- Potential of C sequestration/removal according to pedoclimatic regions
- Sustainability indicators
- Ecosystem services provided

Internal meetings concluded that **organic and mineral soils** should be specified for a determined practice. Likewise, **sustainability indicators** should be organised according to the six categories presented in art. 7 of the Proposal for Regulation for establishing a Certification Framework from Carbon Removals (COM(2022) 672 final) by the European Commission:

- a) climate change mitigation beyond the net carbon removal benefit;
- b) climate change adaptation;
- c) sustainable use and protection of water and marine resources;
- d) transition to a circular economy;
- e) pollution prevention and control;
- f) protection and restoration of biodiversity and ecosystems.



The FG is encouraged to provide science-based figures on **C sequestration rates** by specific practice detailed according to pedoclimatic regions in the EU. Those rates can be useful for policy recommendations, but it should be highlighted that those are estimations.

The **1<sup>st</sup> European Carbon Farming Summit** (Valencia 2024) was pivotal for a wider discussion. In the Breakout Session of this FG, which met 75 people, seven presentations conducted by experts were inspirational Pitches for the subsequent debate. The discussion was driven to address the following questions related to the **general features** of the C farming practices, **main barriers** for adoption and **strategies** for the successful **spreading**:

- What are the key factors to consider in defining a practice as Carbon Farming by land use? (Identify practices and indicators)
- What are the main barriers to engage farmers in adopting innovative techniques on Carbon Farming? How can these barriers be broken?
- What are the strategies for successful spreading of carbon farming practices? (How can stakeholders facilitate the identification of practices)

Some key factors for **defining practices** as C farming are that they should be operational, quantifiable and suitable for each land use, geographic region or production system. A carbon farming practice should provide co-benefits and comply with the “Do no significant harm” principle. The key factors are aligned with the Q.U.A.L.I.T.Y criteria: Q.Uantification, A.dditionality, L.ong-term storage and s.u.stainability. Permanence, quality and quantity of C stored were remarked as key factors for defining C farming practices. In this line, the concept of additionality should be clarified for farmers. According to the experts, this is a key point for rejecting C farming adoption. The climate, the cropping system, the land use and the farmer's perception and attitude are key factors in carbon farming. Some additional agreed characteristics related to C farming practices were that they should be easily adapted locally and demand oriented.



Questions raised from the debate were focused on monitoring reporting and verification (MRV) systems and the uncertainty of accounting: What to do if the MRV system is not ready? What if the results are not desirable?

In order to solve these problems, experts highlight the use of remote sensing to support MRV, science-based indicators, as well as the 2019 Refinement of the Intergovernmental Panel for Climate Change (IPCC) Guidelines for National Greenhouses Gas Inventories, chapter about Agriculture, Forestry and Other Land Use (AFOLU). There is a need to create a guide with general practices and its adaptation to traditional land use.

Some practices indicated as best C farming practices were in agreement with those presented in the pitches: cover crops, reduced tillage, emissions reduction, optimisation of resources, crop diversification, intercropping, edges vegetation, precision irrigation, addition of exogenous organic matter and paludiculture in peat soils.

In general, there was a greater degree of consensus on the main barriers. Some of the discussed and **agreed barriers** were those related to economics, such as low demand for C credits, scarce profitability, lack of support and financing, and the transition cost and risk. In addition, the longevity of the C farming programmes implies a barrier, it is a viable business for a long period.

Another identified issue was that it is easier for large farms to apply to C schemes, an element that might create other competitive disadvantages to the already stressed smallholders. In addition, the access to technology is a significant issue as well as the availability of farm services providers. The lack of new technology, adapted machinery and other technical barriers such as agronomic solutions can limit the adoption of C farming.

Training and transfer of the results were indicated as strategies for **spreading successfully carbon farming practices**. In the discussion, peer-to-peer learning, field level examples, lighthouses, long-term trials and living labs were key strategies for spreading C farming. The role of the farmer as key stakeholder in the transition to carbon farming was stressed.



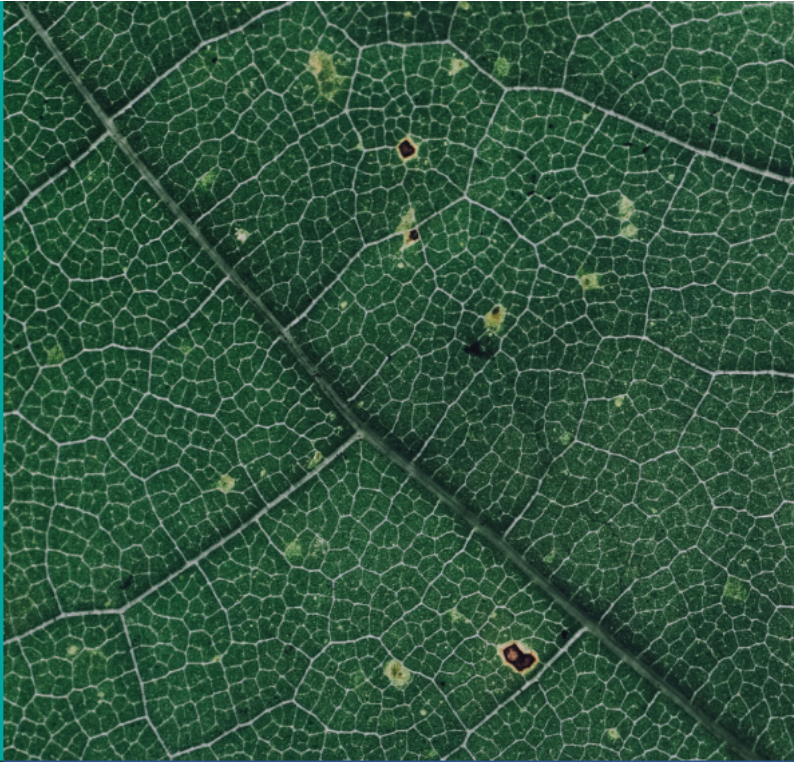


Political issues were raised, the understanding of the Common Agricultural Policy (CAP) and the subsidies framework is key in spreading C farming. Link C farming to CAP was indicated, as some practices are already covered, and the additionality might be in risk. Likewise, the reduction of the burden for farmers would ease the adoption.

**Next steps** have been planned according to the output of the Breakout session 1 of the Summit, and it is opening the debate on the best carbon farming practices with a broader perspective. One of the conclusions of the Summit was that the **perspective of the land users**, that is, farmers, foresters and other landowners, is significant. Their view should be considered and their role within the FG strengthened.

Given the dimension and the high number of practices for each land use, the FG will be **organised with experts for each land use** in order to be more practical in the discussions with a manageable number of people.





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